**U.S. Army Roadmap for Unmanned Aircraft Systems (UAS) 2010-2035**

**What is it?**
The UAS Roadmap outlines how the U.S. Army will develop, organize and employ UAS from 2010 to 2035 across the full spectrum of military operations. The Army continues to capitalize on UAS capabilities and implement emerging technologies so that the Warfighter can conduct missions more effectively and with less risk. The Army's experiences in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) prove that UAS significantly augment mission accomplishment by reducing Soldiers' workload and their exposure to direct enemy contact. UAS serve as unique tools for the commander, which broaden battlefield situational awareness and the ability to see, target and destroy the enemy by providing actionable intelligence to the lowest tactical levels. Unmanned platforms are the emerging lethal and non-lethal weapons of choice that will continue to transform how the Army prosecutes future operations and ultimately save lives. The idea that UAS are "unmanned" is a misnomer because the Soldier is the backbone of the Army's UAS strategy. The Army UAS Roadmap is strictly a conceptual document and is not proscriptive guidance on programmatic decisions. It is not intended to be directive in nature but more specifically used as a strategic communication tool, which establishes a broad left and right limit, for future UAS development in terms of capability and employment. The concepts outlined within the UAS Roadmap are not tied to specific resourcing, personnel, or program initiatives and should not be used to drive requirements. The major ideas outlined within the Roadmap will need to be validated through experimentation, evaluation, implementation, and final assessment. The Roadmap will be reviewed every two years in order remain relevant with respect to operational needs, lessons learned, and emerging capabilities.

**What has Army Aviation done?**
In 1915, Nicola Tesla introduced the concept of unmanned flight in his dissertation that described an armed, pilotless-aircraft designed to defend the United States. The Army's UAS program came to fruition in 1991 when the Pioneer Unmanned Aerial Vehicle (UAV) successfully flew more than 300 combat missions during Operations Desert Shield/Storm. Operational needs and lessons learned from the Global War on Terror (GWOT) prompted the Army to increase the number and capabilities of UAS. There are currently more than 1000 Army unmanned aircraft deployed in theater that have flown almost one million flight hours in support of combat operations.

**What continued efforts does Army Aviation have planned for the future?**
The Roadmap spans a 25-year period and serves as a conceptual document that covers three distinct periods: Near-term (2010-2015), Mid-term (2016-2025), and Far-term (2026-2035).

- Near-term. Continued rapid integration of UAS into tactical organizations meets the Warfighter's current combat requirements. Intelligence, surveillance and reconnaissance are the dominant UAS capability requirements. Systems in the near-term include: Extended Range Multi Purpose (ERMP), Hunter, Shadow and Raven UAS. Exploration of technologies to support sustainment / cargo UAS operations emerges. Commonality and interoperability between systems and controllers remains limited.
- Mid-term. The Army fully integrates UAS. Technological advances increase UAS autonomy and support rapid and fluid operations. UAS resolution and net-centric

force capability improve. Optionally piloted vehicles (OPV) and lighter than air (LTA) vehicles emerge to bridge the gap between manned and unmanned capabilities. Operators manipulate multiple platforms with a universal system and disseminate the resulting information across multiple echelons. Multiple users will also manipulate sensor control from distributed sites.

- Far-term. Drastic commonality and capability improvements of both manned and unmanned systems characterize the far-term. Technological advancements increase endurance and carrying capacity while size, weight and power (SWaP) requirements decrease. The Army leverages advanced vertical takeoff and landing, cargo, Medical Evacuation (MEDEVAC) and Nano UAS technology. A common multi-purpose and multi-role UAS supports the full range of military operations where operators control multiple UAS from a common control system.

**Why is this important to the Army and Army Aviation?**

Army UAS are the “Eyes of the Army” and support the achievement of information dominance by providing the capability to quickly collect, process and disseminate relevant information to reduce the sensor-to-shooter timeline. The UAS Roadmap is the Army’s first synchronized effort to outline a comprehensive UAS strategy for the next quarter-century by focusing on unmanned aircraft, emerging technologies, system interoperability, commonality, and most importantly continued support to the Warfighter. It is nested with the Army Capstone Concept, Warfighter Functional Concepts, and Unmanned Systems (UMS) Initial Capabilities Document (ICD) to capitalize on UAS capabilities. UAS are proving themselves in key operational roles and are embraced by the Warfighters who employ them. UAS will continue to take on increasingly diverse roles to support the Soldier but the “Eyes of the Army” mission will never subside.

The single most important benefit of unmanned systems is their contribution to Soldier survivability. Support to current operations in both Iraq and Afghanistan is paramount while the Army maintains its focus on future, dissimilar battlefields and diverse areas of operation. The fielding of technologically advanced unmanned systems is expected to deliver savings in force structure and costs over time. The Army’s UAS Roadmap simply provides a common vision for all key UAS stakeholders for the next 25 years.

As of: 8 Apr 2010